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Association Between Male Partners' Awareness and Perception and Their Participation in Childbirth Preparedness and Delivery: A Study of Chepterwai and Kibiyet Sub-County Hospitals, Mosop Sub-County, Nandi County

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Abstract

The study employed a community-based cross-sectional analytical design, gathering data from 385 male partners attending Chepterwai and Kibiyet Sub-County hospitals. Through descriptive and inferential statistics, including correlation and regression analyses, key insights emerged. The findings revealed a statistically significant positive correlation between male partners' level of awareness and perception regarding childbirth preparedness, and their subsequent level of participation. Regression analysis further substantiated this, indicating that male partners' awareness and perception significantly predict their involvement, accounting for 42% of the observed variability. This highlights that while male partners do engage in childbirth preparedness, the extent of their involvement is notably influenced by their understanding and attitudes. The implications underscore the critical need for targeted interventions by health ministries and partners to enhance male partners' awareness through health education, shift cultural perceptions, and foster more consistent and active participation in maternal and child health services.

Keywords: Male involvement, birth preparedness, childbirth, awareness, perception, participation, maternal health, Nandi County.

1. Introduction

Childbirth preparedness and complication readiness represent a critical public health strategy aimed at ensuring timely access to skilled medical services during delivery, thereby mitigating delays in seeking care for obstetric emergencies. This comprehensive approach is rooted in the fundamental premise that proactive planning for childbirth and readiness for potential complications significantly reduce adverse maternal and neonatal outcomes. Globally, the burden of maternal mortality remains disproportionately high in developing countries, particularly in Sub-Saharan Africa, where inadequate birth planning and emergency preparedness are key contributing factors (Yargawa & Bee, 2015).

In many of these settings, men hold significant decision-making power, often dictating women's access to economic resources, healthcare services, and even nutritional support during pregnancy (WHO, 2009; Dharma & Bhata, 2013). Consequently, their involvement in childbirth preparedness and delivery becomes paramount, enabling them to support their spouses in accessing crucial emergency obstetric services promptly and preparing adequately for childbirth, ultimately leading to positive birth outcomes (Tekelab et al., 2019). Despite this recognized importance, male involvement in maternal and child healthcare in many Sub-Saharan African contexts, including Kenya, remains low (Iliyasu, 2010). Traditional societal norms often relegate childbearing to solely a woman's responsibility, a sentiment evidenced by the infrequent presence of male partners in maternity units during antenatal care visits, labor, and delivery (Kakaire et al., 2011).

Within Nandi County, Kenya, local data from 2020 indicated significantly lower rates of

skilled birth attendance (SBA) at Chepterwai and Kabiye Sub-County Hospitals (20.3% and 28.4% respectively) compared to the national average of 57%. Similarly, male involvement in Prevention of Mother to Child Transmission (PMTCT) services in the county stood at 15.3%, against a national coverage of 23.0%. These figures underscore a notable gap in male engagement within local maternal and child health initiatives.

While previous research has acknowledged that socio-cultural beliefs and traditional gender roles can impede male involvement in childbirth preparedness, a more in-depth understanding of how male partners' awareness and perception specifically relate to their actual participation is warranted. This study aims to bridge this critical literature gap by focusing on the intricate interplay between male partners' knowledge, their attitudes, and the extent of their practical engagement. Understanding these dynamics is crucial for developing context-specific and effective interventions that can genuinely foster greater male participation in childbirth preparedness and delivery.

Therefore, the specific objective of this study, and the primary focus of this detailed analysis, is to assess the level of association of male partners' awareness and perception and their level of participation in childbirth preparedness and delivery at Chepterwai and Kabiye Sub County Hospital, Mosop Sub County, Nandi County. By exploring this association, this study seeks to provide valuable insights for health policymakers and partners to design more targeted strategies, disseminate effective health information, and ultimately improve maternal and child health outcomes in alignment with Kenya's sustainable development goals.

2. Materials and Methods

This analysis is based on a community-based cross-sectional analytical study conducted in Mosop Sub-County, Nandi County, Kenya. The study design was chosen to assess the factors influencing male partner involvement in childbirth preparedness and delivery, specifically examining the association between male partners' awareness, perception, and their participation. Data was collected from male partners whose spouses had utilized antenatal, labor/delivery, and postnatal services at Chepterwai and Kabiye Sub-County Hospitals.

Study Area and Population: Mosop Sub-County is predominantly inhabited by the Nandi community, whose cultural norms were considered relevant to the study's focus on male involvement. The two Sub-County Hospitals, Chepterwai and Kabiye, serve as referral centers with significant client loads. The target population comprised male partners of women with children under five years residing within the catchment areas of these hospitals. Male partners of women with children over five years or those aged above 50 years were excluded.

Sampling Methods and Sample Size: Purposive sampling was employed to select the study sites (Chepterwai and Kabiye Sub-County Hospitals) due to their role as referral centers and the dominant cultural homogeneity of the community. A purposive sampling technique was also used to select individual participants from the community health units (CHUs) within the hospital catchment areas, aiming to identify subjects with characteristics relevant to the research question. The sample size was determined using Slovin's formula, given a target population of over ten

thousand. With a desired confidence level of 1.96 (for 95% confidence) and a statistical significance level (α) of 0.05, the calculated sample size was 384 participants. To ensure proportionate representation, 165 participants were drawn from Chepterwai and 220 from Kabiye SCH catchment areas, with 55 participants purposely selected from each active CHU.

Data Collection Tools/Instruments: Structured questionnaires were the primary data collection tool. These questionnaires were developed, reviewed by research experts and supervisors, and pretested in a similar setting (Mosoriot Sub-County Hospital catchment area). Reliability was assessed using Cronbach's Alpha coefficient, with all scales demonstrating good to high reliability (male involvement: 0.857; male perception: 0.723; male awareness: 0.818), exceeding the 0.69 threshold for reliability (Metin & Korkman, 2021). Research assistants, recruited from the study community and trained extensively, administered the questionnaires to eligible participants. Informed consent was obtained from all participants, with parental/guardian consent sought for minors aged 15-18 years. Confidentiality and anonymity were assured, and voluntary participation emphasized.

Data Analysis Procedures: Data was cleaned, sorted, coded, and analyzed using SPSS software version 21.0. For the specific objective addressing the association of male partners' awareness and perception with their level of participation, correlation analysis and regression analysis were utilized.

Correlation Analysis: Pearson correlation coefficients were computed to quantify the strength and direction of the linear relationships between:

1. Male partner's extent of participation in childbirth preparedness and delivery and their perception of childbirth preparedness.
2. Male partner's extent of participation in childbirth preparedness and delivery and their knowledge/awareness on childbirth preparedness.
3. Male partner's perception of childbirth preparedness and their knowledge/awareness on childbirth preparedness.

Statistical significance was set at the 0.01 level (2-tailed).

- **Regression Analysis:** Multiple regression analysis was performed to determine the predictive power of male partners' awareness and perception on their level of participation in childbirth preparedness and delivery. This aimed to quantify how much of the variability in participation could be explained by these two predictors.

Ethical Considerations: The study protocol received approval from the Great Lakes University of Kisumu (GLUK) GLUSERC (Ref: No. GLUSERC /009/2024) and a research license from the National Commission for Science, Technology and Innovation (NACOSTI) (License No: NACOSTI/P/24/37812). Permissions were also obtained from various county government departments. All ethical standards regarding informed consent, confidentiality, and voluntary participation were strictly adhered to, ensuring no foreseeable social risks or harm to participants.

3. Results

This section presents the empirical findings specifically addressing the association of male partners' awareness and perception with their level of participation in childbirth preparedness and delivery. The analyses were conducted using Pearson correlation and multiple linear regression, as outlined in the methodology. The Association of Male

Perception and their Level of Participation in Childbirth Preparedness and Delivery. The correlational analysis explored the relationships between male partners' extent of involvement in childbirth preparedness and delivery, their perception of childbirth preparedness, and their knowledge (awareness) on the subject. Table 1 provides a summary of these correlations:

Table 1: Correlational Analysis.

	Male partner's extent of participation in childbirth preparedness and delivery	Male partner's perception of childbirth preparedness	Male partner's Knowledge on child birth preparedness and delivery
Male partner's extent of participation in childbirth preparedness and delivery	Pearson Correlation: 1	Pearson Correlation: .607**	Pearson Correlation: .582**
	Sig. (2-tailed):	Sig. (2-tailed): .000	Sig. (2-tailed): .000
	Covariance:	Covariance: .224	Covariance: .240
	N: 385	N: 384	N: 385
Male partner's perception of childbirth preparedness	Pearson Correlation: .607**	Pearson Correlation: 1	Pearson Correlation: .688**
	Sig. (2-tailed): .000	Sig. (2-tailed):	Sig. (2-tailed): .000
	Covariance: .224	Covariance: .438	Covariance: .336
	N: 384	N: 384	N: 384
Male partner's Knowledge on child birth preparedness and delivery	Pearson Correlation: .582**	Pearson Correlation: .688**	Pearson Correlation: 1
	Sig. (2-tailed): .000	Sig. (2-tailed): .000	Sig. (2-tailed):
	Covariance: .240	Covariance: .336	Covariance: .545
	N: 385	N: 384	N: 385
**. Correlation is significant at the 0.01 level (2-tailed).			

As presented in Table 1, all correlations were found to be statistically significant at the 0.01 level.

Participation and Perception: A moderate to strong positive correlation (Pearson Correlation = 0.607, $p < 0.001$) was observed between male partners' extent of involvement in childbirth preparedness and delivery and their perception of childbirth preparedness. This indicates that as male partners' perception of preparedness becomes more positive, their involvement in related activities tends to increase. The covariance of 0.224 further supports this significant overlap. **Participation and Awareness:** A moderate positive correlation (Pearson Correlation = 0.582, $p < 0.001$) was found between the extent of participation and the level of awareness on childbirth preparedness and delivery. This suggests that increased awareness among male partners is directly linked to greater participation. The covariance for this relationship was 0.240. Perception and

Awareness: The strongest positive correlation (Pearson Correlation = 0.688, $p < 0.001$) was identified between male partners' perception of childbirth preparedness and their knowledge (awareness) on the subject. This strong association indicates that higher levels of knowledge are strongly linked to more positive perceptions. The covariance was 0.336. These correlational findings collectively suggest that male partners who hold more positive perceptions and possess greater knowledge regarding childbirth preparedness tend to exhibit higher levels of involvement. Model Prediction of the association of Male Partners' Awareness and Perception on Their Level of Participation in Childbirth Preparedness and Delivery To further understand the predictive power of awareness and perception on participation, a multiple linear regression analysis was conducted. Table 4.10 summarizes the results of this regression model:

Table 2: Regression Analysis Model.

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics R Square Change	F Change	df1	df2	Sig. F Change
1	.648a	.420	.417	.42575	.420	138.170	2	381	.000
Coefficientsa									
Model	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.				
1 (Constant)	.748	.073		10.247	.000				
Male partner's perception of childbirth preparedness	.329	.045	.390	7.263	.000				
Male partner's Knowledge on child	.238	.041	.315	5.859	.000				

birth preparedness and delivery									
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a. Dependent Variable: Male partner's extent of participation in childbirth preparedness and delivery

b. Predictors: (Constant), Male partner's Knowledge on child birth preparedness and delivery, Male partner's perception of childbirth preparedness

The regression analysis revealed a strong and statistically significant model predicting male partners' participation.

The multiple correlation coefficient (R) was 0.648, indicating a moderate to strong positive relationship between the combined predictors (awareness and perception) and the dependent variable (participation). The R-squared (R^2) value of 0.420 means that approximately 42% of the variance in male partners' level of participation in childbirth preparedness and delivery can be explained by their level of awareness and perception. The adjusted R^2 of 0.417 further confirms the model's explanatory power, even when accounting for the number of predictors. Overall Model Significance: The ANOVA table shows that the regression model is statistically significant ($F = 138.170$, $p < 0.001$). This confirms that the predictors, male partners' awareness and perception, collectively contribute significantly to explaining the variance in their involvement in childbirth preparedness and delivery. Individual Predictor Contributions: Male partner's perception of childbirth preparedness: This predictor had a significant positive coefficient ($B = 0.329$, $p < 0.001$). The standardized beta coefficient ($Beta = 0.390$) indicates that for everyone standard deviation increases in male partners' perception, their participation increases by 0.390 standard deviations, holding awareness constant. Male partner's Knowledge on child birth preparedness and delivery: This predictor also showed a significant positive coefficient ($B = 0.238$, $p < 0.001$). The standardized beta coefficient ($Beta = 0.315$) suggests that for everyone standard deviation increase in male partners' knowledge, their participation increases by 0.315 standard deviations, holding perception constant.

The regression equation derived from this model is:

$$Y = B_0 + B_1X_1 + B_2X_2$$

Where:

Y = Male partner's extent of participation in childbirth preparedness and delivery

B_0 = Constant (intercept) = 0.748

B_1 = Coefficient for Male partner's perception of childbirth preparedness = 0.329

X_1 = Male partner's perception of childbirth preparedness

B_2 = Coefficient for Male partner's Knowledge on child birth preparedness and delivery = 0.238

X_2 = Male partner's Knowledge on child birth preparedness and delivery

This model quantitatively demonstrates that both positive perception and higher awareness significantly and positively influence the extent of male partners' participation in childbirth preparedness and delivery.

4. Discussion

The findings from this study critically underscore the significant association between male partners' awareness, perception, and their actual participation in childbirth preparedness and delivery in Nandi County. The correlational analysis revealed a statistically significant positive relationship across all tested variables. The strong correlation between male partners' perception and their

level of awareness ($r=0.688$, $p<0.001$) indicates that a greater understanding of childbirth preparedness directly fosters more positive attitudes. This finding resonates with the broader literature, where improved knowledge has consistently been linked to more favorable perceptions regarding health-related behaviors (Bhusal & Bhattarai, 2018; Paulos et al., 2020). When individuals are well-informed, they are more likely to appreciate the importance and benefits of a particular practice, such as birth preparedness.

Furthermore, the moderate to strong positive correlations between participation and both perception ($r=0.607$, $p<0.001$) and awareness ($r=0.582$, $p<0.001$) are pivotal. These results suggest that male partners who are more knowledgeable about childbirth preparedness, and who subsequently hold more positive views about their role, are more inclined to actively engage in the process. This alignment with recent research by Smith and Johnson (2022) and Garcia et al. (2023), who similarly observed that comprehensive prenatal education programs and active participation in antenatal classes correlate with increased male engagement during delivery, strengthens the external validity of these findings. However, it's crucial to acknowledge the nuances. While knowledge and perception are strong drivers, the actual *accompanying* of spouses to health facilities for maternal services still showed high variability in participation (as noted in the quantitative results in Section 4.6), suggesting that additional barriers, possibly cultural or logistical, may still exist despite improved awareness and perception. This calls for context-based interventions to translate positive perceptions into consistent practical actions.

The regression analysis further solidified these correlational findings by demonstrating the predictive power of awareness and perception on participation. With an R-squared value of 0.420, the model indicates that a substantial 42% of the variability in male partners' involvement in childbirth preparedness and delivery can be explained by their level of awareness and perception. This implies that while these factors are highly influential, approximately 58% of the variance is attributable to other unmeasured factors, such as socio-cultural norms, economic constraints, healthcare system accessibility, or individual preferences. This aligns with a broader understanding in maternal health literature that male involvement is multifaceted and influenced by a combination of individual, familial, community, and systemic factors (Boltana et al., 2021; Mullick et al., 2018). The individual coefficients within the regression model are particularly insightful. Male partners' perception of childbirth preparedness emerged as a slightly stronger predictor of participation (standardized beta = 0.390) compared to their knowledge (standardized beta = 0.315). This suggests that while knowledge is fundamental, a positive *attitude* or belief in the importance of their role may be a more direct driver of actual involvement. This distinction is vital for intervention design. Educational programs should not only disseminate information but also

actively work to reshape negative perceptions or reinforce positive ones. For instance, challenging the traditional notion of childbirth as solely a "woman's affair" (Wamalwa & Nanjala, 2012) can significantly impact male partners' willingness to participate.

The findings are consistent with existing literature that highlights the critical role of paternal knowledge and involvement in promoting better maternal and infant outcomes (Nielsen et al., 2022; Kamau et al., 2023). When male partners are well-informed and hold positive views, they are more likely to support their spouses through antenatal care, actively participate in birth planning, and be present during delivery. The study's results reinforce the necessity of targeted interventions that not only build awareness but also cultivate a positive perception among male partners regarding their integral role in childbirth preparedness. This aligns with recommendations for comprehensive strategies that address behavioral, social, and economic barriers to male engagement in maternal health (Davis et al., 2016; Peneza & Maluka, 2018).

Limitations of the Study: While the study provides robust insights, it is important to acknowledge certain limitations. As a cross-sectional study, it captures a snapshot in time and cannot establish causality between awareness, perception, and participation. Longitudinal studies would be needed to understand the temporal dynamics of these relationships. Additionally, self-reported data on awareness, perception, and participation might be subject to social desirability bias, where respondents may report what they believe is expected rather than their true practices or beliefs. The study was also confined to two sub-county hospitals in Nandi County, limiting the generalizability of the findings to other cultural or geographical contexts within Kenya or Sub-Saharan Africa. The model explained 42% of the variance in participation, indicating that other factors, not captured in this study, also play a significant role in influencing male involvement.

5. Conclusion

This study provides compelling evidence that male partners' awareness and perception are significantly associated with and predictive of their level of participation in childbirth preparedness and delivery within Mosop Sub-County, Nandi County. While a general agreement among male partners regarding their involvement in childbirth preparedness was observed, the findings consistently demonstrated that not all male partners were equally engaged.

Specifically, the study concludes that:

1. There is a statistically significant positive correlation between male partners' level of awareness and their perception of childbirth preparedness. This means that as male partners become more knowledgeable, their attitudes towards preparedness tend to improve.
2. Crucially, a statistically significant positive association exists between male partners' awareness, their perception, and their active participation in childbirth preparedness and delivery. The regression analysis quantitatively affirmed this, revealing that awareness and perception collectively explain a substantial 42% of the variability in male partners' involvement.

In essence, while male partners in the study area do engage in aspects of childbirth preparedness, the depth and

consistency of this engagement are largely driven by their level of knowledge and the positivity of their perceptions. Areas such as developing a written birth plan and consistently accompanying spouses to health facilities showed higher variability, suggesting that despite general agreement, practical application is not uniform.

Implications for Practice or Policy:

The findings carry significant implications for public health policy and practice, particularly for the Ministry of Health and health partners in Kenya:

1. **Targeted Health Education:** Interventions should move beyond basic information dissemination to a more comprehensive health education approach. Programs need to explicitly address the benefits of health education during antenatal visits, detail potential childbirth complications, and clearly define the male partner's role in developing a written birth plan.
2. **Perception Shift:** Strategies must be designed to actively challenge and change deeply ingrained cultural perceptions, such as the belief that "childbirth is a woman's affair." Promoting a narrative that emphasizes childbirth as a "family's affair" can foster a more inclusive environment for male participation. This could involve community dialogues, male peer education, and involving respected male community leaders in advocacy.
3. **Facilitating Participation:** Practical barriers to participation, such as work commitments or logistical challenges in accompanying spouses to health facilities, need to be addressed. Health facilities could explore male-friendly clinic hours, dedicated male involvement counseling, or community-based outreach programs that make it easier for men to participate.

Recommendations for Future Research:

Building upon these findings, future research should focus on:

1. **Qualitative Exploration:** Conduct qualitative studies to deeply understand the "why" behind the observed variability in male participation, especially concerning the development of written birth plans and accompanying spouses to health facilities. This could uncover specific cultural norms, economic constraints, or interpersonal dynamics not fully captured quantitatively.
2. **Intervention Effectiveness:** Evaluate the effectiveness of different types of interventions (e.g., community-based male engagement groups, health facility-based male counseling, policy changes for paternity leave) in strengthening male partners' awareness, improving their perception, and increasing their consistent participation in childbirth preparedness and delivery across diverse cultural and socio-economic contexts.

Longitudinal Studies: Conduct longitudinal studies to assess the long-term impact of improved male awareness and perception on their sustained participation and its ultimate influence on maternal and neonatal health outcomes over time.

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